TRANSCRIPT OF PROCEEDINGS

INQUIRY INTO THE COVID-19 HOTEL QUARANTINE PROGRAM

BOARD: THE HONOURABLE JENNIFER COATE AO

DAY 4

10.00 AM, TUESDAY, 18 AUGUST 2020

MELBOURNE, VICTORIA

MR A. NEAL QC appears with MS R. ELLYARD, MR B. IHLE, MR S. BRNOVIC and MS J. MOIR as Counsel Assisting the Board of Inquiry

MS C. HARRIS QC appears with MS P. KNOWLES and MR M. McLAY for the Department of Health and Human Services

MS J. CONDON QC appears with MS R. PRESTON and MR R. CHAILE for the Department of Jobs, Precincts and Regions

DR K. HANSCOMBE QC appears with MS H. TIPLADY for the Department of Justice and Community Safety

MR R. ATTIWILL QC appears with MS C. MINTZ for the Department of Premier and Cabinet

MR S. PALMER appears with MR L. MOLESWORTH for Melbourne Hotel Group Pty Ltd trading as Holiday Inn Melbourne Airport

MR A. WOODS appears for Rydges Hotels Ltd

MR. A MOSES SC appears with MS J. ALDERSON for Unified Security Group (Australia) Pty Ltd

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CHAIR: Good morning, Mr Neal.

MR NEAL QC: Good morning, Madam Chair.

CHAIR: Are we ready to proceed this morning, Mr Neal?

MR NEAL QC: I am advised there may be a fresh application for leave to appear this morning, on behalf of MSS Security, I was told.

CHAIR: Is there anyone here from MSS Security? It doesn't appear so, Mr Neal, unless somebody is struggling with unmuting themselves.

We will leave that issue perhaps to be resolved at another time.

MR NEAL QC: Thank you.

CHAIR: Otherwise, it would appear that your first witness, Dr Alpren, is here. Dr Alpren, can you see and hear me?

DR ALPREN: Yes. Can you see me and hear me?

CHAIR: Yes, I can. Over to you, Mr Neal. I understand that this is your first witness to call.

MR NEAL QC: That's correct. Dr Alpren would like to be affirmed.

CHAIR: I will hand you to my associate, who will take you through the administration of the affirmation, and then I'll hand you back to Mr Neal.

DR CHARLES GIDEON ALPREN, AFFIRMED

CHAIR: Thank you, Dr Alpren. I'll now hand you over to Mr Neal.

EXAMINATION BY MR NEAL QC

MR NEAL QC: Good morning, Dr Alpren. Your full name is Charles Gideon Alpren?

A. That's correct.

Q. You are a registered medical practitioner?

A. Yes.

Q. And an epidemiologist?

A. Yes.

Q. And currently employed with the Department of Health and Human Services?

A. That's correct.

Q. You have provided this Inquiry with a witness statement dated 4 August 2020?

A. Yes.

Q. You obviously have a copy of that to hand?

A. I do.

Q. Are you satisfied that the witness statement of that date is true and correct to the best of your knowledge and belief?

A. I am, yes.

Q. Subject to one matter of your report which you want to add some matters to, that's the evidence that you wish to give contained in your report?

A. It is, yes. I do have one matter that, had I been aware of it at the time, I would have likely included in the report, following paragraph 109.

Q. Yes. Thank you. We will come to that in due course.

MR NEAL QC: I tender Dr Alpren's witness statement.

CHAIR: That statement will be marked exhibit 008.

EXHIBIT #008 - STATEMENT OF DR CHARLES ALPREN DATED 04/08/2020

MR NEAL QC: Dr Alpren, apart from your qualifying degree, you have some experience and expertise in epidemiology. Perhaps you could explain the nature of that expertise?

A. I have worked for over five years in public health, mainly within epidemiology, working overseas in Sierra Leone and in the United States for the Centers for Disease Control and Prevention. I have completed the CDC's Epidemic Intelligence Service Fellowship, during which I received vocational training, on the ground training in epidemiology. I have worked at the department as an epidemiologist since the

middle of 2019.

Q. Currently within the Department of Health and Human Services you work as one of the leads in what's called the Intelligence Section of the Public Health Incident Management Team; is that correct?

A. That's correct, yes.

Q. In that capacity, to whom do you report?

A. I report to the Deputy Public Health Commander for Intelligence.

Q. Does that deputy commander report further up the chain?

A. Yes. She reports to the Public Health Commander and also reports to the Chief Health Officer.

Q. In your capacity as one of the leads in the intelligence team, what are the key responsibilities and roles that you have?

A. Well, I supervise and advise epidemiologists in the collection, the management and the analysis of data pertaining to COVID-19, to inform the public health response. It includes advising Deputy Public Health Commanders, the Public Health Commander and preparing or contributing to the preparation of submissions to Crisis Council of Cabinet, which could address the progress of the outbreak spread in Victoria and assist advice on the response, including in relation to restrictions, et cetera.

Q. In your statement you refer to the fact that you provide technical expertise and liaise with internal and external stakeholders as it relates to intelligence. Who are those internal and external stakeholders?

A. Well, we provide information to anybody involved in the outbreak response in Victoria. So that could be information relating to the epidemiology, the trends and trajectories of disease, to inform changes that might be made for anybody involved in making decisions on how they should plan their section of the response. It could be --- so that could be, for example, as I said, the Public Health Commander or Crisis Council of Cabinet, looking at restrictions, that would be the obvious example, but also there are operational things. We inform all the data that goes toward informing any part of the response that needs to know who could have COVID, who does have COVID, who are contacts of people with COVID and who needs help and assistance. So, for example, the public housing outbreak a month or so ago, we remain very heavily involved in making sure the right people have the right data at the right time.

Q. Is that internal to government departments and external?

A. So that would mainly be internal at the Department of Health and Human

Services. External stakeholders include media and press and any of the public who have questions that could come through the Department, about the progress of COVID within Victoria, where we have the epidemiological data at our disposal and are able to answer those questions.

Q. Could you explain to us, both in a general sense and in a medical sense, the nature of epidemiology?

A. Generally, epidemiology is the study of patterns and determinants of disease in specific populations, from the kind of medical perspective public health medicine as distinct from patient-specific medicine, because it advises and implements broad interventions on large groups of people to achieve an overall health benefit.

Q. Yes, and specifically what role do epidemiologists play in understanding and controlling the spread of a communicable disease?

A. We look at data to look for patterns that can forecast the trajectory of disease and then inform interventions to alter that trajectory where necessary. So, typically, within communicable disease we would integrate key known facts and assumptions about disease, including, for example, its mechanism, its transmission, incubation period, et cetera, with patterns, spatial patterns, temporal patterns that we are observing within a population. For example, that could involve a group of infected people in a defined location with disease onset between set dates, an analysis of that group and the circumstances of their interactions can reveal how diseases spread which can then allow us to understand and inform changes --- inform measures that can change disease transmission.

Q. What's the source of the information that you gather in order to do that?

A. The main source of information that we gather is by talking to people who we have been told by laboratories or by clinicians have the disease. So certain diseases are, by legislation, notifiable to the Department by laboratories and clinicians, which are called notifiable diseases. In January, when it --- it was novel coronavirus at the time --- became a public health issue, it was made a notifiable disease. So we are aware of all cases of COVID-19 and we will talk to --- or at least my colleagues in the Case Contact and Outbreak Management Team; not actually in intelligence --- will talk to cases, find out about the timing, the circumstances, the symptoms of their illness, their movements in the time before they became sick and since becoming sick, to understand those patterns.

Q. Does that information include where people work, where they live, with whom they live, that sort of information?

A. Exactly, yes.

Q. Is it within the realm of epidemiology to actually predict the way a communicable disease is going to behave?

A. Certainly we look for patterns that are emerging under specific circumstances at the time, but those patterns and circumstances are changeable. The obvious example of that would be restrictions that people are asked to adhere to, to limit their interactions with others. So we can look at disease trajectory and course and perhaps say what could happen if; but because the circumstances are changeable, we can't say what will happen.

Q. Generally speaking, what function does your Department fulfil in relation to the detection and surveillance, control indeed, of communicable diseases?

A. Well, the Chief Health Officer who works in the Department has certain powers under the *Public Health and Wellbeing Act*, which can be used for purposes including the prevention and control of communicable disease. And a mainstay of that is the collection of data about notifiable diseases which I mentioned just now. We are responsible for the collection and management of notifications and then any relevant public health actions. The public health arm of the COVID-19 response has grown from the Communicable Disease Section of the Health Protection Branch in which the Chief Health Officer works.

Q. You have already mentioned that there is an intelligence team. What is the nature of the work that the intelligence team does? And in a moment I want to ask you about the Case Contact and Outbreak Management Team, so perhaps if you could try to distinguish for us the different nature of the two roles that they play.

A. Broadly speaking, the public health response is --- can be separated into the collection and receipt of the information and the way that that information is communicated to people and people are advised to act, which is case contact and outbreak management. Then the collection and management of the data analysis to understand the patterns within the data and then inform that to the people who are actually on the ground talking to cases, talking to people affected by outbreaks. So those two sections would be case contact and outbreak management for the talking and being on the ground; and the intelligence and epidemiology section for the management and analysis of the data.

There are several duties and responsibilities of intelligence, which include the management and development of the main --- what we call passive surveillance database used by the Department, called the Public Health Events Surveillance System, which I might refer to as PHESS going forward, insofar as it contains to COVID. That system is used to record data for all the notifiable diseases. We provide data to assist the case contact and outbreak management, we report to departments across Government on current case and test numbers by various different demographic patterns. We report to external parties, as I mentioned earlier, analyse epidemiological data, help with media enquiries. We perform modelling of case counts and hospital demand under set assumptions which can assist with the planning, and we also stay on top of the international peer reviewed literature to enable us to advise the response on the best available evidence.

Q. You have indeed set out all the many and varied roles you have in your witness statement, Dr Alpren, but that covers the various roles that you do. Can I ask you now about the qualifications that various people have in the two teams. First of all, the Intelligence Team; who are the sections, if you like, within there and what sort of people and what qualifications work in those areas?

A. We are a large team and we have several sections with essentially a few criteria roles. We have surveillance officers who need to have a particular attention to detail to be able to make sure that data are inputted into the system in the correct way. They have no necessary prerequisite qualification. They have an academic science background or not, and they are responsible for the data entry. Data managers, or data analysts, who often have a science background, are responsible for bulk management of data and management of the surveillance officers. Then we have epidemiologists and a role we call epidemiologist support, which is like a junior epidemiologist. The junior epidemiologists would have often recently undertaken a Masters of Public Health degree or be in the middle of one, and they will do basic data analysis and some advanced data management; and the epidemiologists, who will have a Masters of Public Health degree, a Masters of Applied Epidemiology or a PhD, are responsible for advanced data analysis and data management and responsible for the reporting by the team.

We also have individuals responsible for maintaining databases and the IT infrastructure necessary for the function of the notifiable disease surveillance system. In commenting on case contact and outbreak management, I should point out that it is not my realm of responsibility, that team, so I base my answers really on my experience of talking to my colleagues and my knowledge of them. There are public health officers who often have backgrounds as environmental health officers or nurses, and they are responsible for the collection of data from cases and clinicians and for the contact tracing and implementation of the public health action. There are also public health physicians who are medical doctors and members of the Faculty of Australasian Public Health Medicine within the Royal Australasian College of Physicians and they are responsible for the oversight of public health actions and development of policy.

Q. Could you describe for us in general terms the nature of contact tracing, what does it involve?

A. Contact tracing is a term that refers to the identification and the assessment and management of people who potentially have been exposed to disease and are therefore at higher risk of developing or spreading disease, and working with those people to interrupt the spread of the disease.

Q. What sorts of principles and methods guide the way in which contact tracing is carried out?

A. Because of the way the Department structure has the Case Contact and Outbreak

Management Team who are responsible for the actual contact tracing separate to the intelligence section where the epidemiologists are, I'm really basing these answers on work prior to my time at the Department and working with the CCOM team. But in other places I've worked, these tasks were not separate. Most information is obtained by interviewing people with a disease about their movements and then working with them and the people they mention that they have had contact with, to ask people to isolate or quarantine.

Q. The sort of information that you then rely on, are there limitations to what you are able to obtain and how reliable it might be?

A. We work with people as best we can to ascertain information from them and allow them to understand the reasons that we are asking for information. But we are limited generally by the information that is --- that people are prepared to divulge. It is possible to talk with others, to go back where we notice inconsistencies and to ask people again. We talk to other --- we work with employers, et cetera, to get information from elsewhere. But, in the end, we are dependent on information volunteered to us on questioning by people we interview.

Q. Can I ask you: are there what might be called competing priorities between being fully candid with you about the sort of information you want, and the interests of the people you are interviewing?

A. Yes. In my experience, I should really stress that I feel that people are very, very happy to try to engage in behaviours that limit the transmission of disease. People do not want to spread disease to others. But certainly they can have competing priorities, be they financial or they need to make sure that food is available to them and their families and their families are cared for. So whilst they very much want to limit anybody else getting sick, they also need to make sure that them and their loved ones are cared for well. And sometimes the need to make sure that caring or financial obligations are met can interfere with the advice that we might give for stopping disease transmission.

Q. Yes. In carrying out contact tracing are you able to then clearly conclude, where there is a group of people who might have been infected, the direction of infection? So if we have a cluster of people who are infected, what can you determine about who infected whom, et cetera?

A. Contact tracing attempts to draw what conclusions can be drawn, but often those are limited. We can determine the sequence of symptom onset, from which we can infer the order of viral acquisition. But transmission occurs in networks of people who have been exposed to one another, multiple times often, and in different settings, including with different degrees of exposure. Also, of course, there is often a significant range in what is called the incubation period of the disease, which is the time between exposure to the disease and actually bringing the virus into your body and becoming unwell. So precise directionality and precise source of acquisition often cannot be concluded. We recognise links, we call them epidemiological links,

between individuals, which would be similarities in time and place that suggest the potential for disease transmission with a common source, but often we can't say person 1 got it from person 2 who got it from person 3.

Q. In your statement you give what I call a helpful indication or a helpful physical context on your hypothetical island. Perhaps you could explain that to us?

A. Sure. To give an example of what we call like a transmission network and the limitations of contact tracing, if you were to imagine person A arriving on an island where persons B and C have been isolating for a very long time alone for longer than the incubation period of COVID, so we know they definitely have not got COVID. Immediately after their arrival, person A became ill with COVID, four days later person B became ill with COVID and four days after that person C became ill with COVID. Now, the incubation period of COVID is between two and 14 days so we can certainly conclude that person A transmitted the virus to person B who became ill four days later. But we can't conclude whether person A or person B, or both of them, transmitted the virus to person C. We would however say that all three people fall within the same transmission network and are epidemiologically linked.

Q. Can I ask you now to describe to us how epidemiology and genomic sequencing cooperate?

A. Genomic sequencing allows us to examine a large group of cases consisting of multiple transmission networks and then to determine within the bounds of the limitations of science which cases within that large group belong to which transmission networks or similar transmission networks. We incorporate information from the epidemiological investigation, the contact tracing, and the genomic science. By bringing those two things together we can further infer about disease transmission networks and sometimes the mechanisms and risks associated with viral transmission.

Q. In terms of how one adds to the other, for example, if you had a worker in a health care centre infected and there were other cases in the same health care centre, epidemiologically, you could perhaps hypothesise a link. What does genomic sequencing bring to that equation?

A. Health care settings are a particularly clear example of one of the places where genomic science can help because it is very important to be able to understand the transmission dynamics with respect to health care personnel, whether or not they caught COVID in that health care facility or outside the health care facility, whether there is transmission within a facility, those kinds of questions.

So my --- if you have cases among patients and staff in facility A, all of which you know to be epidemiologically linked to one another, and then another case in that same facility among another member of staff who is not epidemiologically linked in any way, they are in a completely different part of the facility and you really don't know how they came to be infected, you could worry that you have got transmission

within that facility that you haven't spotted, that would need some action to prevent other people becoming sick, both patients and staff.

What genomics can do is look at the transmission networks that those cases sit in and tell you whether the person with no known epidemiological link is in fact part of that same transmission network or isn't. We had a case exactly like that several months ago where we found that a person with no epidemiological link was not part of the same transmission network and so there was no evidence of transmission widely within the facility.

Q. So it's fair to say that epidemiology and genomic sequencing are very much a complementary skill?

A. Absolutely, absolutely. The best conclusions about disease transmission and transmission networks can be drawn by combining information from the epidemiological investigation and the genomic sequencing.

Q. If we can turn to the question of COVID-19 and its characteristics that you need to understand from an epidemiological point of view, and you deal with that in your statement, in particular the subheadings, if you like. The first of which I'd like to take you to is the concept of R_0. We have heard a little bit about it in evidence and a lot about it in the media. Can you give us your understanding of that concept?

A. Yes. The R_0 refers to the number of people who've become infected, from one person with the disease on average across a population who are susceptible to the disease without disease control measures. Now, it is a hypothetical concept that would vary from population to population, depending on population density, on how people act, you will get a different R_0 in different cultures and settings.

We think the R_0 for COVID-19 is around 2.71, so that means that without disease control measures, including contact tracing, physical distancing, et cetera, approximately 27 people would become infected from 10 people with the disease.

Q. So R_0 is not inherent for the communicable disease, it's a function of the disease and human behaviour?

A. Yes.

Q. You then have in your witness statement discussed the concept of incubation period. Could you explain that for us too, please?

A. The incubation period refers to the time between an individual being exposed to the virus and the time they start experiencing symptoms. With COVID, we say that the average incubation period is about 5.5 days, with a range of two to 14 days.

Q. Does the range of two to 14 days align with the concept of a 14-day quarantine period?

A. Exactly, yes.

Q. Then the question I have: when a person is infectious, in the age of the virus, if you like, or the life cycle of the virus, what do you say about that?

A. It is evident with COVID-19 that somebody can be infectious, that is, able to spread the disease to others before they become unwell with it, before they develop symptoms. We think that the infectious period for COVID starts about two days before symptoms. So that's when someone could potentially spread virus to others.

Q. Speaking epidemiologically, is that a particular challenge of COVID-19?

A. Absolutely. It really is. It means that despite people's best efforts to isolate as soon as they develop symptoms, which of course is very, very strongly messaged across Victoria at the moment, as soon as you get symptoms, get tested and then isolate, stay away from others, until you receive the results. You could still have had the opportunity to spread disease, to spread virus, before those symptoms developed.

Q. Is part of that challenge that you are not feeling unwell when you are infectious and others don't perceive you to be unwell?

A. Exactly.

Q. Do we have any statistics about the extent to which people who are asymptomatic actually do infect others?

A. I don't have any statistics to hand. I would be happy to revert to the Inquiry if you would like. Certainly in my experience it does seem that COVID-19 is particularly infectious at the beginning of the illness, around just before and just after the development of symptoms and that the majority of disease transmission happens at that point.

Q. Do you have any statistical information about the number of people who actually are positive COVID cases and who are also asymptomatic?

A. Approximately 17.9 per cent of cases experience what we call asymptomatic infection, so that's the proportion of cases people diagnosed with COVID and reported to us, that will not experience any symptoms, so they might not know that they are sick. Because symptomology can vary throughout the course of the illness, the proportion of people who remain asymptomatic throughout the illness is unknown, as is their degree of infectiousness.

Q. You also, under the heading of the characteristics of COVID-19, talk about the concept of serial interval. What is meant by that?

A. The serial interval refers to the time between successive cases in a chain of

transmission developing symptoms. So it is the time between a case being exposed to the virus and that case being able to expose the next person to the virus. We say that the serial interval for COVID seems to be around five days, a little bit less than the incubation period, with a range of 3 to 7.5 days.

Q. Thank you. Could I ask you now to turn to a different topic, which is the nature of the collaboration that exists between your Department and the Doherty Institute.

A. The Doherty Institute is a joint venture with the University of Melbourne and the Royal Melbourne Hospital, combining research, teaching, public health and reference laboratory and diagnostic services in infectious disease. We have a very close working relationship with the Doherty Institute. Within the Doherty Institute there is the Microbiological Diagnostic Unit, MDU, with which the Department, especially the communicable disease section, liaise directly without engagement from the broader Doherty Institute. We have engaged in a data-sharing agreement that operates so that we can improve surveillance of COVID-19 in Victoria, through integration of genomic data which is obtained by MDU where they do the genomic sequencing and epidemiological data obtained through case and contact and outbreak management investigations by the Department.

Q. Could you give us an understanding of the sequence of events from the time that a person is diagnosed as being COVID positive through to the work of the unit and back into your Department?

A. A person would be --- to go through the full chain of events, a person becomes symptomatic, they get tested through a swab taken from the nose and then they go home and isolate. That swab is generally sent to a laboratory, not MDU, where it is tested and, if positive, the laboratory will notify the Department, who will do the case contact management and the laboratory will also send the sample to MDU. MDU will perform the genomic sequencing.

Also, daily, the Department will share completely de-identified data with MDU, with some epidemiological information and that allows MDU to understand certain characteristics about the samples that they are sequencing. In either weekly regular or ad hoc if urgent meetings between MDU and the Department we review the genomic sequencing and epidemiological data together. We work to understand what extra epidemiological data needs to be brought to bear to answer the questions and we bring the two sources of information, epidemiological and genomic, together.

Q. From the time that the MDU has received a sample to the time that it is sequenced and available to you, is there an average turnaround time?

A. It is greatly dependent on case volume at the MDU, I think it would be fair to say. Certainly, I'm not working --- I don't work at MDU so I can't comment on the amount of time that it takes to sequence cases. But in a --- when there are not many cases, then it's generally about five days between receiving a sample and then being able to discuss it in detail, integrating the two sources of information.

Q. You were asked in your witness statement this question: has the Department traced current Victorian COVID-19 cases the particular times, transmission events and/or locations and if so, what are those times, events and locations? I want to be careful with you, so in relation to your answer to that question, you said:

> *Combining genomic data provided by MDU and epidemiological data from PHESS, the Department has concluded that almost all cases of COVID-19 in the community (not acquired overseas) that have been sequenced amongst cases diagnosed after 30 May 2020 can be traced back to transmission that started at the Rydges Hotel Swanston Street and Stamford Plaza Hotel.*

Quoting directly from your witness statement at paragraph 79. You go on to say there are only --- at this stage of your witness statement --- two exceptions that you want to comment on and we will come to those in a moment.

Having said that, you then undertake a particular analysis of the two outbreaks, and that's what I want to take you to now. In terms of what's called the Rydges Hotel outbreak, if I can summarise for the moment, you say that on 9 May a family of four arrived from overseas and in the sequence of the following several days each of them became symptomatic and each of them was diagnosed as COVID positive.

A. Yes.

Q. That family, on 15 May the entire family was moved to the Rydges Hotel. That's 15 May. And you say further:

> *On 25 May 2020 three members of staff became symptomatic and were subsequently diagnosed with COVID-19.*

I am trying to quote you almost exactly there. What I wanted to ask you, from that point in time, both epidemiologically and genomically, what were you able to establish? First of all, epidemiologically, from the point of 25 May, what were you able to establish?

A. Epidemiologically, the investigation would have looked at the people we know to have developed illness within --- who are notified to the Department and looked for links between --- we found links between people working at the same place, epidemiological links, and therefore denoted that there was an outbreak among those people. We asked them about their close contacts, people they lived with, people who they had had close contact with at work, and asked them to enter quarantine for up to 14 days after the last time that they could have been exposed. We knew that those people had been working around in a place where there were people who had returned from overseas who were diagnosed with COVID, there were other cases around, and so we knew that there were potential links to those cases.

You could theorise that they could have been spread from somebody with COVID

who was residing in the hotel, epidemiologically you could theorise that. But, of course, you could also theorise that perhaps somebody had been exposed to COVID outside of the hotel, and there was at that point another outbreak of COVID in Victoria so it would have been --- it would not have been possible at the time to be sure where the first case acquired among somebody who worked at the hotel had been acquired.

Q. If I could ask you to pause there. You say in your statement:

> *Between 26 May and 18 June 2020, a total of 17 people were epidemiologically linked ....*

That was either they were working at Rydges Hotel or they were household or social contacts of those people?

A. That's right. So that would be 17 people in Victoria who became cases of COVID who were epidemiologically linked to the Rydges Hotel. They were people who either worked within the hotel in range of roles, or they were household or social contacts of those people, and so we linked them epidemiologically.

Q. That deals with your epidemiological hypothesis. What then happened on the genomic analysis front that enabled you to get a better understanding of that outbreak?

A. As I mentioned earlier, MDU receive all the samples of --- all the positive samples of COVID cases around the State and they worked to sequence those cases. On 30 May we received the first genomic analysis relating to the outbreak we knew among staff and their household contacts, which revealed that the first case among a member of staff clustered genomically, which means it was within the same transmission network as a family who had returned to Australia on 9 May, the family you mentioned earlier in your question. So we knew at that point that one case, the first case, clustered genomically with a family from within the hotel.

Q. When you say "clustered genomically", you mean there was a significant similarity in the genomic sequencing of the cases?

A. Exactly. The similarity of the genomic sequences that the virus identified from the staff member and the family allowed us to conclude that they belonged to the same transmission network.

Q. Then if we could advance the genomic sequencing, that was one person. Did you do --- was further genomic sequencing done in respect of the original 17 people?

A. Yes. So as of 31 July we had received genomic sequencing reports from 14 of those 17 cases that we had linked epidemiologically to the outbreak and all 14 clustered genomically together and clustered genomically, of course, with the family of overseas returnees, detailed, that I mentioned earlier. All .... (unclear).

Q. At the time of this outbreak in Victoria, were there in fact other COVID-19 cases which had been acquired in Australia?

A. There were. There were a few, but there was one other active outbreak and we knew of no links between cases in the Rydges Hotel and cases involved in any other outbreaks within Australia, in Victoria, at the time.

Q. Can you say whether those other outbreaks, the ones that you say were not linked, are a continuing source of infection or not?

A. No, they are not. They have been contact-traced. We know of no epidemiological links to any cases since that time, the beginning of June, and have --- and all the sequences of cases since that time have not clustered with anything prior, apart from those two exceptions that I mentioned in my statement.

Q. I think in your statement you say more positively, those sequences that have been established or identified, they cluster only with the Rydges or the Stamford outbreaks or subsequent returned overseas travellers. Is that correct?

A. That's correct.

Q. What conclusion do you draw about the likelihood of cases at the Rydges Hotel being other than an outbreak of that hotel?

A. We have 14 of 17 cases that were epidemiologically linked, definitely sequenced together. With the fact that there was so little other transmission and no known epidemiological links, I concluded that it is very highly likely that all cases in the Rydges Hotel, including those three for which no genomic sequencing was available, belong to the same transmission network, and that it's --- that all the cases identified as epidemiologically linked to the Rydges Hotel outbreak can be traced to the family of overseas returnees that I mentioned just now.

Q. If we turn to the Stamford Hotel outbreak, you say in your statement --- and again I want to be reasonably precise with you:

> *On 1 June 2020, a man returned to Australia from overseas and commenced mandatory hotel quarantine. On the same day, he became symptomatic. He was tested for COVID-19 on 3 June and diagnosed with COVID-19 on 4 June 2020.*
>
> *On 11 June 2020, a couple returned to Australia from overseas and commenced mandatory hotel quarantine. On the same day, one of them became symptomatic. On 12 June 2020, the other became symptomatic. Both were tested for COVID-19 on 14 June 2020 and diagnosed with COVID-19 on 15 and 16 June 2020.*

On 10 June 2020, a member of staff became symptomatic. He was diagnosed with COVID-19 on 14 June.

Similarly, from that point in time, epidemiologically, what were you able to establish?

A. A total of 46 people were epidemiologically linked to the Stamford Plaza Hotel outbreak, diagnosed with COVID-19. Those links indicate acquisition of virus linked through contact, for example, through working at the Stamford Hotel or being household contacts of staff members.

Q. From an epidemiological point of view, there was a hypothesis that it was localised. What does the genomic sequencing then add to that picture?

A. The genomic sequencing showed that this outbreak has consisted of two distinct chains of transmission indicated by two genomic clusters among the cases identified as epidemiologically linked to the outbreak; one of the clusters arose from the overseas returnee from 1 June and the other to the overseas returnees from 11 June.

Q. How many of the cases that are associated there have been genomically sequenced?

A. To date, the Department has received sequence reports from 35 of the 46 cases epidemiologically linked to the outbreak, and all 35 of those cases clustered genomically, which means they were within the same transmission network within one of those chains of transmission that I just mentioned.

Q. Is there any known link between the Rydges case and the Stamford case?

A. Epidemiologically linked, no. No, there's no known link.

Q. Genomically linked?

A. No.

Q. You say in your statement that:

Since the time of the Stamford Hotel outbreak, only genomic sequences that cluster with Stamford, Rydges, or subsequent overseas returnees have been identified in Victoria.

To what extent are you able to be confident about that conclusion?

A. Very confident. MDU have sequenced many samples since that time and the only sequences revealed have clustered with Stamford, Rydges or subsequent overseas returnees. I do detail a couple of small exceptions from which there is no ongoing transmission in my statement, but all the sequences, other than those exceptions, that have b

een received by the Department since that time have clustered with Rydges or Stamford.

Q. At paragraph 106 of your statement, you actually say that 2,109 from cases since 26 May --- sorry, of those, 2,109 sequence samples, 1,996 cases clustered with Rydges-associated genomic clusters, and 96 clusters were Stamford Hotel clusters. What degree of confidence do you have as that to proposition?

A. I have a very high level of confidence with respect to that statement, which since that time, since I wrote this report a couple of weeks ago, further sequencing has been performed at MDU and communicated to the Department, which is consistent with the conclusions within this report, only sequencing with Rydges or Stamford on any samples sequenced since that time. I can update those numbers that you just read out from paragraph 106, if you like?

Q. Do you have it to hand?

A. Yes.

Q. If you would, please.

A. In total, there has been sequencing performed for 5,395 cases, of which 4,981, which is 92.3 per cent, are able to be included. The other 7.6 per cent failed data quality and quality control checks. 3,594 cases cluster genomically with Rydges-associated genomic clusters. They actually cluster now within 24 different genomic clusters associated with the Rydges outbreak. The main initial cluster is the largest.

For Stamford --- do you want Stamford now?

Q. Yes.

A. For Stamford, we have 110 cases clustering together within the genomic clusters associated with the Stamford Plaza outbreak. There are two separate transmission networks, as I mentioned, associated with these clusters which we conclude is from those two separate importation events that I just mentioned. Of cases sequenced --- sorry, of samples sequenced from cases within the last month, during which time in Victoria we have had just over 12,000 cases, we have 3,234 cases with sequence data available. So these are cases sequenced in the last month. And 3,183 were genomically linked to the Rydges associated cluster.

Of cases with symptom onset in the last month --- so these are the most recent cases --- we have 1,589 cases that have been sequenced, and 1,577 of them, which is 99.2 per cent, clustered genomically with Rydges and the other 12 cases, 0.8 per cent, clustered genomically with Stamford. There are no cases that have been sequenced that have had symptom onset in the last month that sequence in any other transmission networks.

Q. Given that you are talking about an incomplete genomic sequencing, are you saying that the level of genomic sequencing that has taken place would lead you --- would that have caused you to expect that if there were other independent clusters happening, you would have seen some evidence of it?

A. I think it's likely we would have seen some evidence of it, yes. Certainly, we had seen evidence of the potential for other transmission events in the past. But we have seen no evidence of any other transmission. That's not to say that there are no other transmission events that could be there. But because there are very few people now coming into Victoria who potentially offer new sources of importation of the virus, it is less and less likely as time goes on that there are other transmission networks out there.

Q. You mentioned earlier that you thought there were two exceptions to this general pattern that you wanted to comment on.

A. Thank you. In the first, an overseas returnee whose symptoms started on 29 June clustered genomically with a person resident in Melbourne whose symptom onset was 28 June, so beforehand. Now, those sequences do not cluster genomically with any other cases examined and neither case was found to transmit virus to anybody else, including their close contacts and family. The cases have no known epidemiological link. That is, they are not known to have had contact or have had any opportunity for contact.

One explanation for this finding could be an unrecognised case, most likely an overseas returnee, because this genomic cluster has not been seen elsewhere else in Victoria, who developed COVID prior to either of those cases and transmitted virus to both.

The second exception involves a health care worker who developed COVID-19 on 2 July, having looked after an overseas returnee who had been hospitalised. The sequences from the returnee and from the health care worker clustered together and we are not aware of any further transmission from that case at this time. Contact tracing and monitoring in respect to those cases was performed and there are no further transmissions.

Q. Are there any other exceptional cases that you need to draw attention to?

A. I would like to draw attention to one other smaller exception that I would have written at this point in my statement, had I been aware at the time. Beforehand, a quick explanation: the standard test for SARS-Cov-2, the virus that causes COVID-19, involves detection of the genetic material, the RNA, from the virus. This is the type of test used across Victoria for diagnosis of COVID-19. A feature of this type of test for many viruses is that occasionally --

Q. I am sorry to interrupt you. This is text that you would rather have had in your

original report; is that correct?

A. Yes.

Q. Could I ask you to read it a little bit more slowly, please?

A. Okay. Sure. From the top.

The standard test for SARS-Cov-2, the virus that causes COVID-19, involves detection of the genetic material, the RNA, from the virus. This is the type of test used across Victoria for diagnosis of COVID-19. A feature of this type of test for many viruses is that occasionally dead virus or pieces of virus, which cannot replicate or infect another person but which do contain the genetic material, remains detectable after the virus has died and the person is no longer considered infected and can no longer infect others.

With that in mind, I'm aware of a case who was asymptomatic throughout the time they had virus detected, who had virus detected on 19 June. The person was screened as part of their work. The virus clustered genomically with cases seen in Victoria in March. Explanations for this finding include shedding of dead virus acquired several months previously; could also include infection from unrecognised transmission in Melbourne in the interim or infection from an unrecognised case in hotel quarantine who had virus acquired overseas in the same genomic cluster as that seen in Melbourne in March. None of this person's close contacts developed symptoms and we have not soon any further cases that fall in this genomic cluster since.

Q. You were then asked in your witness statement to address the question of transmission. You were asked specifically this question:

> *As at: (a) 15 July 2020; and (b) the date of receiving these questions, was/is it your understanding that a COVID-19 transmission event occurred at Rydges Hotel in Carlton during the Hotel Quarantine Program? Please identify the information on which your understanding is based.*

The answer to that question was:

> *From the epidemiological and genomic data presented above, I conclude that a transmission event or events occurred at Rydges Hotel, Swanston Street during the Hotel Quarantine Program. This event or events has not been identified.*

Is that the state of your understanding currently?

A. Yes.

Q. In your statement you talk about hypotheses, but your position is you don't understand that there was --- you cannot identify, rather, any particular event?

A. Yes, that's correct.

Q. In respect of the Rydges Hotel, you were asked this question:

> *As at the date of receiving these questions, in your opinion, what percentage of current COVID-19 infections in Victoria can be linked to transmission events at the Rydges Hotel in Carlton?*

Perhaps you could read back your answer to that, please, at paragraph 119.

A. Yes:

> *As of 29 July the Department had received reports of sequences pertaining to 827 currently active cases. Of those, 817, (99%) sequenced with Rydges-associated genomic clusters.*

As detailed previously, it's my opinion that it is likely that no large transmission networks are present in Victoria for which no cases have been sequenced. It is impossible to precisely ascertain the number of cases to have arisen from each of the active cases for which we have sequences, but I am satisfied to conclude that in my opinion it is likely that a high proportion, approximately 99 per cent of current cases of COVID-19 in Victoria, have arisen from Rydges or Stamford. However, I cannot be very precise in the number or proportion to have arisen from each outbreak separately. It is likely that the large majority --- I said in my statement approximately 90 per cent or more --- of COVID-19 infections in Victoria can be traced to the Rydges Hotel.

Q. You were then asked a question about transmission events at the Stamford Plaza Hotel, the same question:

> *As at: (a) 15 July 2020; and (b) the date of receiving these questions, was/is it your understanding that a COVID-19 transmission event occurred at the Stamford Plaza Hotel during the Hotel Quarantine Program? Please identify the information on which that understanding is based.*

Could you read back your answer to that question, please?

A. Yes:

> *123. From the epidemiological and genomic data presented above, I conclude that at least 2 transmission events occurred at Stamford Plaza Hotel during the Hotel Quarantine Program. The specific events have not been discovered as far as I am aware.*
>
> *124. The genomic clusters that characterise this outbreak had not been seen prior to this outbreak in Victoria. The dates of onset of symptoms of the first*

overseas returnees in these clusters are earlier than the dates of onset of the other cases with which they cluster genomically. From this I conclude that there was at least one transmission event in the hotel for each of the two recognised genomic clusters in the outbreak.

125. I held my opinion on this matter on 15 July and it has not changed since that time.

Q. So is the position in respect of both of those outbreaks as presently advised that you are not able to identify any transmission event, you are simply able to talk to the fact of transmission?

A. Yes, that's correct. The investigations, certainly at the Rydges Hotel, revealed opportunity for transmission at different times but could not conclude as to any specific event or events where transmission occurred.

Q. Can I take you to your statement at paragraph 127, where were you asked the question:

As at the date of receiving these questions, in your opinion, what percentage of current COVID-19 infections in Victoria can be linked to transmission events at the Stamford Plaza Hotel?

A. As of 29 July we had received reports of sequences pertaining to 827 currently active cases. Of those, 10 sequenced with Stamford-associated genomic clusters. It is my opinion, as I detailed earlier, that it is likely no large transmission networks are present in Victoria for which no cases have been sequenced. It is impossible to precisely ascertain the number of cases to have arisen from each of the active cases from which we have sequences. Therefore, I am satisfied to conclude that in my opinion it is likely that a high proportion, approximately 99 per cent, of current COVID-19 cases in Victoria have arisen from Rydges or Stamford. However, I cannot be very precise in the number or proportion to have arisen from each outbreak separately. It is likely that a small proportion, approximately 10 per cent, as I say in my statement, or less of current COVID-19 infections in Victoria can be traced to the Stamford Hotel.

Q. If we pause there, could I ask that Figure 3 from the witness statement of Professor Howden be brought up. Dr Alpren, are you familiar with that?

A. I am, yes.

Q. Are you able to relate the evidence that you have just given in relation to the Stamford and Rydges Hotel outbreaks to the information on that graph?

A. Certainly. What you see on that graph is a dot for every case sequenced from cases in Victoria. The orangey dots are cases thought to have acquired infection overseas and the grey dots are thought to have acquired infection more likely in

Australia. It is a timeline, so time going from February on the left through to August across. The dots are stacked, dependent on their genomic clusters, which are detailed on the vertical axis on the left-hand side there. At the very top you see cases that have not yet been sequenced and then, just below that, cases that cannot be sequenced because they didn't pass quality control. Then below that you see the different transmission networks, genomic transmission networks, of cases within Victoria.

Q. Perhaps you could pause there. If we could zoom on to 45A?

A. I can see it.

Q. That is sufficient for you, is it?

A. Thanks, that's perfect. Transmission network 3, which is 58A and 22A, plus genomic cluster 45A, are the cases pertaining to the Stamford Hotel.

Q. Those clusters we see at the start of the cluster, one orange dot being an overseas traveller in one case and the two orange dots in the other, is consistent with the evidence you have just given?

A. Exactly.

Q. What can you say as to the transmission network 2?

A. Transmission network 2 is other cases that cluster genomically with the outbreak from the Rydges Hotel. So if you look down at the bottom, 15AR, that is the lower-most line in transmission network 2, it starts with four dots of cases in overseas returnees, then subsequent cases that cluster genomically with them, and that's the transmission network associated with the Rydges Hotel.

Q. Thank you. We can take that figure down now.

Dr Alpren, can I ask you a question that is not dealt with in your witness statement, but one which the Inquiry might appreciate your opinion on. As an epidemiologist who has experienced this pandemic in Victoria and also in your work overseas, are there any general observations you want to make for the benefit of the Board --- the Board is going to make recommendations in its report about future possibilities --- any particular observations you would like to make about ways in which the response to a pandemic such as this might include?

A. I think that in my opinion there is --- and my experience there is nothing as far as case and contact tracing that beats local understanding. I think that understanding the communities, the people, who are affected by whatever disease you are seeking to control is crucial to be able to bond with those communities and work with them to reduce disease transmission. I think that we will benefit from local knowledge and local understanding and on the ground epidemiology and contact tracing in affected

communities.

I think that the response would benefit from a complete integration of data and epidemiology with contact tracing, as has been my experience in other places, and I think that the response will benefit from an understanding of the nuance and different approaches required at different times within a response. And the limitations of certain approaches taken to the extreme --- for example, testing. We are doing loads of testing in Melbourne, in Victoria, across the State, and we were at the beginning of these outbreaks that we have talked about today, but you have to test the right people. You have to be involved with the right people and have to understand what is necessary in order to help reduce disease transmission.

My last point would be that the most valuable resource that the epidemiologists certainly have at present, which is something that we have all got precious little of, is time. I think that being able to spend that small extra amount of time to do the real deep analytics that are necessary to understand the subtle trends is something that the response overall would really benefit from.

Q. I'm just interested in your comment that we needed to ask the right people. What did you have in mind, when you were saying that?

A. You mean my comment about local knowledge?

Q. Yes.

A. I mean that when you understand the community and you understand the place that the outbreak is happening, it is much easier to understand where you need to be paying special attention to. I'll make up an example --- and I promise, this is completely made up off the cuff, it doesn't say to any reality I'm thinking of --- that if you know a suburb and you know that there is a particular place where everyone goes, then you will know that you need to make sure that if you have got cases in that area, you need to be interfacing with people in that place that everyone goes to, be it a shopping centre or whatever. That's where you should be putting people to reach out to the community, that's where you should be putting your testing. You need to know the suburb, you need to know the place.

You might get an outbreak among a particularly marginalised community and having people who know that community really well, who have been among the homeless shelters, for example, for years, who know the communities, of people seeking asylum or people who inject drugs or whatever marginalised community might be affected, you need people who are trusted and who know those communities in order to really engage well and get the right information to be able to stop disease transmission.

Q. Are you suggesting some sort of effective databank of social contacts or cultural contacts which would facilitate what you are talking about, or what did you have in mind?

A. I think I'm suggesting local outreach, local field epidemiology, local case and contact tracing, would supplement and assist, in my opinion, the efforts, the huge efforts, that are gone to centrally in the Department.

CHAIR: Dr Alpren, just to clarify, I understand you are talking about that intervention, that social, cultural and linguistic intervention to modify behaviour through engagement with trusted local people, to suppress transmission?

A. Yes.

CHAIR: Thank you. Sorry, Mr Neal.

MR NEAL QC: No, that was pretty much the question.

Dr Alpren, is there anything else you wanted to add to the observations you have just made?

A. No. Thank you.

MR NEAL QC: That being the case, I don't have any further questions for Dr Alpren.

CHAIR: Dr Alpren, if you will just bear with us for a moment, we might take a mid-morning break now for 15 minutes. That will just give any of the parties with leave to appear the opportunity to approach Mr Neal, if there are any remaining matters that are to be put to you before I excuse you. If you just bear with us for the next 15 minutes. We will return at 11.35.

ADJOURNED **[11.20 AM]**

RESUMED **[11.44 AM]**

CHAIR: Yes, Mr Neal.

MR NEAL QC: Thank you.

Dr Alpren, there is one further matter I would like to ask you. In your statement at paragraph 86, this is in relation to the Rydges outbreak, you say:

> *On 25 May 2020 three members of staff became symptomatic and were subsequently diagnosed with COVID-19.*

Of your own knowledge, can you say whether the "three members of staff" were internal Rydges staff or external staff?

A. Internal Rydges staff, meaning direct employees of the hotel?

Q. Yes.

A. Then they were external. Sorry, a mixture. My understanding is there was a mixture.

Q. But you don't have direct knowledge of that?

A. I don't have direct knowledge and I should caution that the kind of --- the precise mechanism of their employment is not really something that the epidemiological investigation would need to know. We need to know the role they do but not exactly who employs them.

MR NEAL QC: Thank you. I did not wish to press that matter any further, Madam Chair.

CHAIR: Thank you, Mr Neal.

Mr Woods, I understand you are appearing on behalf of Rydges?

MR WOODS: Correct.

CHAIR: Apart from that matter now addressed by Mr Neal, there are a couple of other matters you wish to raise with Dr Alpren?

MR WOODS: Yes. They are only very brief and I won't take a moment with them, if that is convenient now?

CHAIR: Yes, please.

CROSS-EXAMINATION BY MR WOODS

MR WOODS: Dr Alpren, just falling out of that question from Counsel Assisting, you identified in answer to question 21 that was asked you of, at paragraph 86, that there were three members of staff. It is the case that it was one member of staff and two Government-contracted security individuals. Does that ring a bell with you?

MS HARRIS: Can I raise a matter with the Board, if the Board pleases?

CHAIR: Yes, Ms Harris.

MS HARRIS: If the questions are going to become quite specific about individuals who are included in that reference in paragraph 86 of Dr Alpren's statement, that may

tend to enable identification of the individuals. The Department would strongly resist Dr Alpren being required to answer any questions which identify individuals, first because there is a very strong public interest in the Department receiving this information confidentially and maintaining its confidentiality in that information. I can expand on that if that would be of any assistance to the Board.

Secondly, because this is not something that is within Dr Alpren's direct knowledge. There are other people with much more direct knowledge of these matters and it may be that in a situation where the Practice Direction with respect to cross-examination about further topics outside the witness's statement, there can be some resolution about how this very sensitive issue of disclosure of information provided by persons who are tested pursuant to the communicable diseases regime could be --

CHAIR: Ms Harris, perhaps let me just intervene at the moment. I think the issue can be quite simply resolved by indicating to Mr Woods that this witness has made clear, from an epidemiological point of view, he doesn't distinguish between what form of engagement brought those people into the quarantine program being run out of Rydges and I think that's the limit of what this witness is able to say, Mr Woods.

MR WOODS: I see.

CHAIR: That has been addressed by Mr Neal and I am not going to let you take this matter any further at this stage.

MR WOODS: I understand. If I could just respond very briefly to the Board on that issue. The issue is this: I have very clear instructions that it was one staff member and I obviously have a client who is concerned that what the witness statement says, which has now become public, is that there were three members of staff and I was simply seeking to clarify that to the best of this witness's ability.

CHAIR: Yes. I have understood from the question and answer put by Mr Neal --- let's go back to it ---

MR WOODS: It might assist the Board for me to say that is all I wanted to say on the issue by way of ---

CHAIR: All right.

MR WOODS: That is simply all I am seeking to clarify. I am not pressing the issue, I am not seeking to ask other questions about it, if the Board pleases.

CHAIR: All right. Are there any other questions you have of this witness, Mr Woods?

MR WOODS: Yes, just one other brief topic.

CHAIR: Yes.

MR WOODS: Dr Alpren, given the incubation period that you have mentioned, the average being, as I understand it, 5.5 days and anywhere between 2 and 14 days, would it be correct to say that it is not known which of those three individuals was the first to contact COVID from the returnees?

A. That's correct.

Q. Do I take it you are not aware of any evidence that it was the staff member rather than the other two other individuals who passed the virus on to anyone else?

A. That's correct.

MR WOODS: Thank you. They are all the questions, if the Board pleases.

CHAIR: Thank you, Mr Woods.

Mr Moses, I'm not sure whether you are there and can hear us?

MS ALDERSON: Thank you, Commissioner. My name is Jaye Alderson, I am here to address the tribunal on any matters. Commissioner, we do not wish to ask this witness any questions.

CHAIR: Thank you for that clarification.

Mr Neal, that completes the evidence from this witness?

MR NEAL QC: That's correct, yes.

CHAIR: Thank you. Dr Alpren, thank you for your attendance. You are now otherwise excused.

A. Thank you.

THE WITNESS WITHDREW

CHAIR: Mr Neal, I understand that the next witnesses to be called will commence at 10.00 on Thursday morning?

MR NEAL QC: I believe that is correct, yes.

CHAIR: And that the Board will sit on both Thursday and Friday later this week?

MR NEAL QC: Yes.

CHAIR: And that the website will be updated later on this afternoon with respect to more detail about those witnesses coming before the Board on Thursday and Friday, and potentially next Monday as well.

MR NEAL QC: Yes. They are what we have coined as the experiential witnesses, if the Board pleases, those actually involved in the quarantine program, from various perspectives.

CHAIR: Thank you, Mr Neal. We will adjourn the further hearings of the Board now until 10.00 am on Thursday, 20 August.

MR NEAL QC: If the Board pleases.

HEARING ADJOURNED AT 11.53 PM UNTIL 10.00 AM ON THURSDAY, 20 AUGUST 2020

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